USSR

GIKHMAN, I. I., KADYROVA, I. I.

"Some Results of Investigation of Stochastic Differential Equations"

Teoriya sluchayn. protsessov [Theory of Random Processes], No 1, Kiev, Nauk. Dumka Press, 1973, pp 51-68 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V90 by the authors)

Translation: Definitions are given and properties are established for stochastic curved integrals and stochastic differential equations with continuous and unlimited delay in time, having the form $d\xi = \alpha(\theta, \xi_t, dt)$, where $\alpha(\phi, t)$ is a random field with functional argument $\phi$. Relative to the field $\alpha(\phi, t)$, it is assumed that the arbitrary moments of first and second order of the quantity $\alpha(\phi_1, \Delta t) - \alpha(\phi_2, \Delta t)$ satisfy the local lipshitz condition with a random constant.

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UDC:  577.4

USSR

VALAKH, V. Ya., GIKHMAN, L. I.

"Concerning an Approach to Describing the Operation of Automata in Random Media"

Kiev, Teor. kibernetika--sbornik (Theoretical Cybernetics--collection of works), 1971, pp 187-194 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V414)

[No abstract]

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USSR

GIKHMAN, I. I., SKOROKHOD, A. V.

"The Theory of Random Processes. Volume 1"

Teoriya Sluchaynykh Protsessov. T. 1 [English Version Above], Moscow, Nauka Press, 1971, 664 pages, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V36K by B. Rogozin).

Translation: Chapter 1. Basic Concepts of the Theory of Probabilities, Chapter 3. Random Functions, Chapter 4. Linear Theory of Random Processes and Chapter 6. Limit Theorems for Random Processes, as the author's note, in the reworked form contained Chapter 3, partially 1 and 4, 5, 9 respectively of an earlier textbook on the theory of random processes written by the same author's, cited here as an introduction (RZhMat, 1966, 7V30K). Some of these changes will be noted below. Chapter 2. Random Sequences Contains the Basic Properties of Sequence of Random Quantities forming Martingales, semi Martingales, Markov chains, walks with independent, identically distributed reticular vector jumps, stable sequences and partial sums of series. Chapter 5, Probability Measures in Functional Spaces, studies the conditions of realization of measures corresponding to random processes in certain functional spaces, formed either from metric or from vector spaces. The relationship between positively defined functionals and measures in

USSR

GIKHMAN, I. I., SKOROKHOD, A. V., Teoriya Sluchaynykh Protsessov, Moscow,
Nauka Press, 1971, 664 pages.

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properties of the characteristic functional and linear and quadratic func-
tionals in H with Gaussian measure are discussed. The results of Chapter 5
are used in Chapter 6 to analyze weak convergence of measures in H, and also
to present the characteristic functional of a limitlessly divisible distribu-
tion in H, and problems of the theory of addition of independent random quan-
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space. Then, the properties of the set of permissible shifts of a measure
in Hilbert space H are studied, as well as transforms of H, converting measure
μ in H to an absolutely continuous measure relative to μ. In conclusion,
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from the point of view of properties of absolute continuity. In Chapter 8.
Measurable Functions in Hilbert Spaces the conditions of representability of
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linear functions are studied, similar conditions are presented for measurable
linear operators in H, the properties of measurable polynomial functions and
2/3

USSR

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Also, for the convenience of the reader, we point out that in lemma 1 of
paragraph 4, Chapter 4 of the introduction, sufficiency of the conditions of
the lemma is proven twice rather than proving their necessity and sufficiency
while in this edition this mistake is corrected (see lemma 1, paragraph 4,
Chapter 3), and, furthermore, T.2 of paragraph 1, Chapter 9 of the introduc-
tion, containing errors in the formulation and proof of sufficiency of two
conditions have been altered in T.4, paragraph 1, Chapter 6.

1/3

USSR

GIGORKIN, V. I., Lipetsk Branch of Moscow Institute of Steel
and Alloys

UDC 669.15'74-194:669.017.3

"Influence of Carbon and Manganese on Phase Transformations
of Manganese Alloys"

Abstract:  In this article the author studies the phase trans-
formations of manganese alloys prepared from chemically pure
components with different amounts of carbon and manganese.
The binary alloys treated for the solid solution have the
following structure: $\gamma+\alpha'$; $\gamma+\varepsilon+\alpha'$; $\gamma+\varepsilon$; and $\gamma$.  The bound-
aries of these regions are arbitrary and are determined by
the degree to which they are alloyed: approximately 8, 16,
and 30% Mn.  In the binary Fe-Mn alloys there is one interval
of direct $\gamma\rightarrow\alpha'$, $\gamma\rightarrow\varepsilon$ and inverse $\alpha'\rightarrow\gamma$, $\varepsilon\rightarrow\gamma$ transformations.

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USSR

GIGORKIN, V. I., Izvestiya VUZ, Chernaya Metallurglya, No 10, 1973, pp 127-131

The temperature for the onset of these transformations is lowered with increase in manganese concentration. In the ternary Fe-Mn-C alloys there are two temperature intervals of the direct $\gamma \to \alpha'$; $\gamma \to \alpha''$ and inverse $\alpha' \to \gamma$, $\alpha'' \to \gamma$ transformations. The temperature of the onset of the $\gamma \to \alpha'$ and $\alpha' \to \gamma$ transformations does not depend on the carbon concentration, and with an identical amount of manganese the temperature of these transformations coincides in the Fe-Mn and Fe-Mn-C alloys. Carbon and manganese sharply reduce the temperature of the $\gamma \to \alpha''$ transformation.

The authors give several graphs illustrating the above discussions.

The article contains 6 illustrations, 1 table, and 12 bibliographic references.

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AA0051782

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239444 PHASE METER FOR BALANCED INSTRUMENTS in which
the revolving shaft, under test is connected
to magnet (2) mounted inside bipolar electromagnet
(3) energised by impulses from oscillator (11) in
the collector circuit of transistor (12). The
position of shaft (5) responds to the phase shift
between the oscillator and shaft (1).
6.6.67 as 1161362/18-10. L.D. GIK & V.N.NEKURIASHCHE
AUTOMATION & ELECTROMETRY INST. SIBERIAN SECT.ACAD.
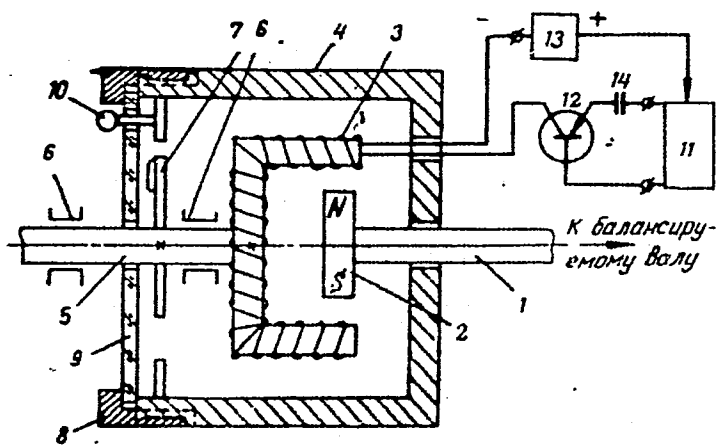SCIENCES USSR. (24.7.69) Bul 11/18.3.69. Class 21e.
Int.Cl. G 01r.

4

AUTHORS:  Gik, L. D.; Nekuryashchev, V. N.
1  Institut Automatiki i Elektrometrii Sibirskogo Otdeleniya
2  AN SSSR

19820140

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К балансиру-
ему́му Валу

19820141

USSR                                                          UDC 681.142

NEKRASOV, M. M., OSADCHUK, V. S., GIKAVYY, V. A.

"Problem of Inductive Behavior of Superhigh Frequency Transistors"

Abstract:  A study was made of the inductive nature of the behavior of the
input impedance of a high-frequency transistor with variation of the feed con-
ditions and the signal frequency.  The possibility of controlling the active
and reactive parts of the input impedance by means of the emitter current and
the external base resistance is demonstrated experimentally.  Curves are pre-
sented illustrating these conclusions.  Both the active and reactive components
of the input impedance of the transistor element increase with an increase in
the instrument multiplier in the base circuit in accordance with the formula

$$Z = r_e + r_b \left[ 1 - \frac{\alpha_0}{1 + (\omega/\omega_\alpha)^2} \right] + j\, \frac{r_b \alpha_0 (\omega/\omega_\alpha)}{1 + (\omega/\omega_\alpha)^2}$$

where $\omega$ is the operating frequency, $\omega_\alpha$ is the limiting frequency of the ampli-
fication coefficient with respect to current in a circuit with a common base,
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USSR

NEKRASOV, M. M., <u>Poluprovodnikovaya tekhnika i mikroelektronika,</u> No 6, 1971, pp 74—76

and $\alpha_0$ is the low-frequency value of the current amplification coefficient; $r_e$ is the emitter resistance and $r_b$ is the high frequency base resistance. The investigated transistor element provided for adjustment  of the inductance twice on variation of the emitter current from 0 to 14 milliamps.  Adjustment of the inductance by varying the instrument multiplier in the base circuit is most effective.

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USSR

NEKRASOV, M. M., OSADCHUK, V. S., and GIKAVYY, V. A.

"Inductive Behavior of UHF Transistors"

Abstract: Experiments are described to investigate the inductive characteristics of uhf transistors connected in a common base circuit. The block diagram of the equipment for the experiments is shown, in which the transistor output is short-circuited for alternating current through a capacitor. In a preliminary mathematical analysis, a formula for the input impedance of the transsistor is derived, and it is shown that one of the terms in the formula indicates an inductive component. This conclusion is confirmed by the experimental data, in which the effect of the distributed impedances of the input leads and the transistor casing are taken into account. Curves plotted for the active and reactive components as functions of the base resistance indicate that the most effective means of tuning the inductance is by changing the external resistance of the base circuit. The authors are associated with the Kiev Polytechnical Institute.

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USSR

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1/1

USSR

UDC: 577.4

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The relationship between positively defined functionals and measures in
1/3

USSR

GIKHMAN, I. I., SKOROKHOD, A. V., Teoriya Sluchaynykh Protsessov, Moscow,
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2/3

USSR

GIKHMAN, I. I., SKOROKHOD, A. V., Teoriya Sluchaynykh Protsessov, Moscow, Nauka Press, 1971, 664 pages.

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3/3

USSR                          UDC:   519.21

GIKHMAN, I. I.

"Statistical Theory of Nonlinear Systems With Discontinuous Trajectories"

Translation:  On the basis of the concept of a stochastic curvilinear
integral in a random field, the author constructs a very general sto-
chastic differential equation, and presents conditions sufficient for the
existence and uniqueness of the solution of this equation.  Some proper-
ties of this solution are then studied.  In particular, a limit theorem
is proved on the convergence of the solution in the case of convergence
in a certain probabilistic sense of the right side of the equation.
Equations with a small parameter are considered for which theorems of
the averaging principle type are established.  Conditions of existence
of stationary solutions are studied.  An investigation is made of the
stability of the solutions in various probabilistic senses.  In particu-
lar, a theorem is proved on stability for the first approximation.
R. Khas'minskiy.
1/1
                                  - 10 -

USSR                                UDC: 534

GIKHMAN, I. I.

"Statistical Theory of Nonlinear Systems With Discontinuous Trajectories"

Tr. 5-y Mezhdunar. konferentsii po nelineyn. kolebaniyam. T. 1 (Works of the Fifth International Conference on Nonlinear Oscillations. Vol. 1), Kiev, 1970, pp 193-205 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7A149)

Translation: The author considers motions defined by a stochastic differential equation of the form

$$dx = a(x, t)dt + \beta(x, t, dt) \qquad (1)$$

where $\beta(x,t,s)$ is a family of stochastic random processes which are independent of the increment in $s$, are dependent on $x$, and in which $t$ is treated as a parameter. The motions described by equation (1) in the presence of momentary forces may have discontinuous phase trajectories. A limit theorem is established for a family of equations type (1) which depend on some parameter $\lambda$. This theorem concerns convergence of the distributions

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GIKHMAN, I. I., Tr. 5-y Mezhdunar. konferentsii to nelineyn. kolebaniyam, T. 1, Kiev, 1970, pp 193-205

of solutions of equations of type (1). An averaging method is outlined. Fluctuations of the exact solution of equation (1) relative to the solution of the averaged equation are considered over large time intervals. Conditions of existence of stationary processes which satisfy equation (1) are derived for equations which are homogeneous relative to time. Conditions of stability of a trivial solution of a stochastic differential equation without aftereffect are studied with respect to a first-approximation equation by constructing a generalized Lyapunov function. Several aspects of stochastic stability are considered. Bibliography of 17 titles. K. R. Kovalenko.

2/2

USSR

UDC 615.471:[614.777+628.19]074:543.42.062

SHEL'NIKOV, V. Ye., TIMAKHOV, O. N., ININ, Yu. S., IKONNIKOVA, S. V., GIKKEL', A. A., GONCHAROV, A. T., AFONIN, V. I., PERSIYANTSEVA, V. B., and SOKOLOV, B. K., Central Design Bureau and Pilot Plant, USSR Academy of Medical Sciences, Moscow and Institute of Biology of Inland Waters, USSR Academy of Sciences, Borok, Yaroslavl Oblast

"A Multipurpose Spectrofluorimeter to Study Natural and Polluted Water"

Abstract: The akva-MF spectrofluorimeter developed by the authors can be used for rapid determination of individual organic and mineral compounds present in water, for automatic regulation of fluorescent substances in a stream, for detection in lakes and seas of water masses differing in chemical composition and origin, and for study of the conversion and breakdown of compounds under the influence of biological and physicochemical factors. Analyses can be made in the laboratory, in the field, or on a research vessel. The spectrum of fluorescent compounds can be obtained directly at the sampling site. The apparatus is a single-beam recording spectrofluorimeter designed to function in the visible and UV regions of the spectrum. With the use of interchangeable attachments, it can record spectra of fluorescence, excitation, and phosphorescence in a solution as well as substances separated in chromatographic zones on paper.
1/1

USSR

UDC 66.048.5

GIL', V. V. and ANAN'IN, V. N.

"Experimental Investigation of the Processes of Evaporation and Sublimation in a Vacuum"

Minsk, Teplo- i Massoobmen pri Nizkikh Temperaturakh, 1970, pp 31-37

Abstract:  Because of its great practical interest and because scientists are having trouble agreeing on the fundamental problems involved in the transport of heat and mass, this article describes an experimental set-up for a quantitative determination of the heat-mass exchange characteristics of complex technical mistures on a concentrated nitric acid base during evaporation (sublimation) from an open surface in the pressure range of $1-10^{-4}$ torr and the temperature range of $-200-+20°$ C.  The set-up has built-in the possibility of registering fields of partial pressures using an electron beam.  A method is proposed for measuring the temperature fields using a microconductor gauge.  A curve indicating the dependence of temperature on distance over the evaporating surface is plotted.  Equations are given to describe the various factors involved such as evaporation rate, heat flux density, radiant heat flux in a closed space, mass exchange coefficient, and coefficient of heat exchange by radiation and by convection.  The article contains three figures and eleven bibliographic citations.
1/1

USSR

UDC 669.71.053.4

NIKOLAYSHVILI, N. M., GILASHVILI, L. V., PAVLOVA, L. V.

"Obtaining Alumina from High Grade Georgian Aluminum Raw Material"

Tr. Kavkaz in-ta mineral'n. syr'ya (Works of the Caucasian Institute of Mineral Raw Materials), 1971, vyp. 9 (11), pp 363-365 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G178)

Translation: A study was made of syenites, trachytic and pumice tuffs by the method of chemical beneficiation of the rock by alkaline solutions in auto- claves and open vessels at atmospheric pressure with subsequent sintering of the concentrates obtained with $CaCO_3$ and $Na_2CO_3$ and also by the method of di- rect sintering of the rock with $CaCO_3$ and $Na_2CO_3$. The pumice tuffs are the most easily stripped rock. The concentrates obtained after chemical benefici- ation contain 23-27% $Al_2O_3$ and 36-40% $SiO_2$. When sintering these concentrates at 1,150-1,200° with $CaCO_3$ and $Na_2CO_3$, the $Al_2O_3$ extraction was 81-91% and alkali was 81-85%. By the direct sintering scheme, the $Al_2O_3$ extraction was 80-28% and alkali, 75-78%. The optimal conditions of reduction of alunitized rock are the following: temperature 620-650°, duration 1 hour, amount of reducing

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USSR

NIKOLAYSHVILI, N. M., et al., Tr. Kavkaz in-ta mineral'n. syr'ya, 1971, vyp. 9 (11), pp 363-365

agent 2% of the sample weight, fineness of crushing 270 mesh. The $Al_2O_3$ extraction was greater than 68%. The leaching out of the reduced alunitized rock under the conditions of alkali concentration 100-150 grams/liters, time 30 minutes, temperature 95-98°, S: L = 1:4, permits extraction of 67-68% of the $Al_2O_3$. With sintering of the reduced alunitized rock, the $Al_2O_3$ extraction was 92%.

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AP9053089

UR 0289

PRIMARY SOURCE:     Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 148 - 151

V. G. Torgov, V. N. Andrievsky, E. N. Gil'bert,
I. L. Kotlyarevsky, V. A. Mikhailov, A. V. Nikolaev,
V. A. Pronin, D. D. Trozenko

## THE EXTRACTION OF Pd AND Pt(IV) FROM NITRIC, HYDROCHLORIC AND SULPHURIC ACID SOLUTIONS BY ORGANIC SULFIDES

The extraction of tracer amounts of Pd and Pt (IV) from nitric, hydrochloric and sulphuric acid solutions by 0,5 M solution of organic sulfides ($R_2S$ where $R = C_4H_3 - C_8H_{17}$, $C_6H_5$ and thiophane) in benzene has been studied. The dialkylsulfide extraction can be used in separation Pd from Pt (IV) from nitric and hydrochloric acid solutions and for simultaneous extraction Pd and Pt from sulphuric acid solutions.

1949     1847

USSR

GIL'BO, Ye. P., CHELPANOV, I. B.

"Conversion of Random Signals by Circuits Containing Majority Elements"

Translation:  The probabilistic properties of processes at the output of a majority element are defined.  An expression is produced for the correlation function of the output signal through the correlation functions of three stable input signals.  The dispersion of errors in circuits consisting of a majority element and linear filters is calculated.

1/1

USSR

GIL'BO, Ye. P., CHELPANOV, I. B.

"Use of Median Algorithm to Increase the Accuracy and Reliability of Data Processing"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Technology. Republic Interdpartmental Collection], 1972, No 15, pp 138-143 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V187, by the authors).

Translation: The problem of processing of the results of parallel measurement of a signal is studied. It is assumed that the measurements are not equally accurate, but that the variation in accuracy is uncheckable, i.e., the parameters of errors in the individual measurements channels are unknown. Under these conditions, the estimate of the useful signal used is the median formed of the results of measurement. An analysis is presented of the accuracy of estimates both from the standpoint of the dispersion of error and on the basis of probability that the error will exceed a fixed level. The properties of distributions of the median are studied. It is shown that with essential difference in accuracy of initial data, the median allows sufficiently good estimates of the measured signal to be produced.

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USSR

UDC 656.25.071.84.002.5e

SHAYEVSKIY, N. A., GIL'BURD, L. M., Chief Designers of the Odessa Branch of the Central Design Office of the Ministry of Railways, ODINTSOVA, A. I., GOL'DSHTEYN, V. P., Design Engineers

"IKI-ST Meter for Fringe Distortions of Telegraph Signals"

Moscow, Avtomatika, Telemekhanika i Svyaz', No 10, 1971, pp 11-14

Abstract: The technical specifications, operating conditions, speed control conditions, and transmitter contact regulation of the IKI-ST meter which measures fringe distortions of telegraph signals with high accuracy are discussed. The meter has been prepared for series production at the Odessa Promsvyaz' Plant. It is designed to measure the distortions of single-current and double current signals code No 2, to regulate the transmitter contacts of the telegraph set, and to monitor and control the telegraph speed. Provision is made to measure distortions at speeds of 50, 75 and 100 baud. The measurement of the start-stop distortions is based on the start-stop method of receiving code combinations and comparison of the proposed characteristic modulation times developed by the meter with the actual reproduction times of the signal reaching the inputs of the meter. The operation of the device is illustrated by diagrams.
1/1

1/2    005                    UNCLASSIFIED              PROCESSING DATE--11SEP70
TITLE--COMPLETE UPZ-1 AND UPZ-2 TESTING DEVICES -U-

AUTHOR--GILCHER, O.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ELEKTRICHESKIYE STANTSII, NO 4, 1970, PP 64-69

DATE PUBLISHED------70


SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--ELECTRIC MEASURING INSTRUMENTS, ELECTRONIC TEST
   EQUIPMENT/(U)UPZ1 ELECTRONIC TEST EQUIPMENT, (U)UPZ2 ELECTRONIC TEST
   EQUIPMENT


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1410          STEP NO--UR/0104/70/000/004/0064/0069

CIRC ACCESSION NO--AP0104724
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0104724
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  A DESCRIPTION IS GIVEN OF
  PRINCIPLES, NETWORKS, AND PARAMETERS OF DEVICES FOR TESTING MANY KINDS
  OF SAFEGUARDS.  THE RESULTS OF CHECKING VARIOUS SAFEGUARDS ARE QUOTED.

UNCLASSIFIED

TITLE--GAS ABSORPTION (REVIEW FOR 1967-1968) -U-

AUTHOR-(02)-RAHM, V.M., GILDENBLAT, I.A.

COUNTRY OF INFO--USSR

SOURCE--TEOR. OSN. KHIM. TEKHNOL. 1970, 4(1), 20-47

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS ABSORPTION, MASS TRANSFER, PHASE EQUILIBRIUM, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0126          STEP NO--UR/0455/70/004/001/0020/0047

CIRC ACCESSION NO--AP0103806
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0103806
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW OF THE MOST IMPORTANT
  WORKS IN THE FOLLOWING CATAGORIES: GENERAL PROBLEMS OF ABSORPTION, MASS
  TRANSFER IN ABSORPTION APP., THE SURFACE OF THE PHASE CONTACT AND THE
  DRIVING FORCE OF THE TRANSPORT PROCESS DURING ABSORPTION, DESIGN CALCNS.
  OF ABSORPTION APP., HYDRODYNAMICS AND MASS TRANSFER IN DIFFERENT TYPES
  OF ABSORBERS, ABSORPTION IN ISOLATED SYSTEMS, AND SOME INDUSTRIAL
  ABSORPTION PROCESSES.            FACILITY:  MOSK. KHIM.-TEKNOL. INST. IM.
  MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR                                        UDC: 536.32.2

TARASOVA, T.F., GIL'DENGORN, I.S. and ROGEL'BERG, I.L.

"Thermocouple of Palladium-Chromium and Palladium-Aluminum Alloys"

Tr. In-ta fiz. met. Ural'sk. nauch. tsentra AN SSSR (Transactions of Physics Metrology Institute, Ural Scientific Center, Academy of Sciences USSR) 1971, vyp 28, pp 261-265 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8, 1972, Abstract No 8.32.862)

Translation: Results are presented of the systematic investigation of thermoelectric properties and heat resistance of double and triple solid solutions of palladium with the metals of III-VIII groups of the periodic system, the purpose of the investigation is to develop new alloys with palladium base, containing no gold or other metals of the platinum group (except palladium). It is established that thermocouples from $Pd + 10Cr - Pd + 3Al + 5Ni$ alloy have adequate stability, sufficient sensitivity ( $\sim$ 22 mcV/degree) and long life at elevated temperatures. At present thermocouples from this alloy are tested under service conditions (4 illustrations, 3 references).
1/1

Environmental & Ecological Problems

USSR                                          UDC 614.72:621.311.21]-037

GIL'DENSKIOL'D, R. S., Candidate of Medical Sciences, RIKHTER, V. B., and
LEVKIN, V. P., Moscow Scientific Research Institute of Hygiene imeni
F. F. Erisman

"Possibility of Forecasting Atmospheric Pollution and Present-Day Hygienic
Preconditions for Estimating the Extent of Scattering of Emissions from
Regional Electric Power Stations"

Moscow, Gigiyena i Sanitariya, No 11, 1972, pp 14-18

Abstract:  The maximum permissible concentrations of sulfur dioxide and nitric
oxide in the air near an electric power station, as set forth in official
instructions for establishing standards for gaseous emissions, were found to
be reasonably close to the values determined by actual measurements.  Since
nitric oxide is invariably present in electric power plant emissions, it is
necessary to take into account the summation effect produced on the body by
this gas and sulfur dioxide when estimating the degree of atmospheric pollution
likely to result from the operation of a newly built electric power station.

1/1

GIL'DEYEV, A.KH

AIR MATHEMATICS

# ALGORITHM OF OPERATOR ACTIVITIES IN PROCESS OF TARGET CLASSIFICATION ON RADAR SCOPE

The purpose of this investigation is to develop a mathematical model (algorithm) of operator activities in the classification of objects which he sees on the radar scope. The operator accomplishes classification on the basis of information obtained from the radar scope in the form of brightnesses, sizes and relative rates of movement of the blips produced by the objects to be classified. Using this information and a priori data about the character of the targets, the operator makes a decision concerning the correspondence of each given blip to a certain class of target. The need to develop a method by which to find the numerical probabilities of correct and erroneous classification of targets according to their blips on the radar scope has increased in recent time. The urgency of solving this type of problems is underscored, for example, by B. F. Lomov, et al [5].

Existing views [1, 2] toward a model of operator activities in the process of classification of objects which he detects on the basis of the parameters of the blips on a cathode-ray tube (CRT) presume that when blips appear that correspond to various targets the operator will classify them by comparing each parameter of the blips (brightness, for example) with some "reference" attribute of the given parameter, which is memorized during the training process. As a result of such comparison the operator relates blips with greater brightness than the reference value to one class, and blips with less brightness to another. Classification is done in like manner on the basis of other parameters of the blips.

Such a model is valid in the case when the operator classifies a single target or group of targets for which neither the relationship of the parameters of the blips nor the presence or absence among them of certain classes of targets is known ahead of time. However there is another smaller class of problems for which the operator has a priori information about the presence of certain classes of targets in the

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[I - USSR - F]

detected group and knows the relationship of the parameters of the blips that correspond to the various classes of targets. In this case, as shown by polling a large number (about 50) of operators, man classifies objects by comparing the parameters of their blips.

It was discovered by polling a group of operators that classification is done in parallel with respect to all blips and successively with respect to their parameters as long as the volume of information in one presentation does not exceed the operator's capabilities to process it.

In the latter case the operator begins to analyze not all the blips, but only those which are located on an individual part of the CRT scope. Here the "strobe" part of the CRT will contain only the number of blips that the operator can analyze in one presentation [3, 6].

During the time of one presentation the operator classifies with some probability all the detected blips or a part of them, either correctly or erroneously, or classifies the targets according to the principle of equal probability. In each ensuing cycle of observation the operator's decision concerning the membership of a given target to a certain class is corrected. Consequently, the probability of correct classification increases. The model of the result of the operator's actions in such a situation is satisfactorily approximated by the Bayes formula [9, 10].

In the general case the operator classifies targets according to the set of parameters of their blips. In this case, obviously, the model of his actions will be similar to the one described by L. D. Filonov [8].

The essence of the problem consists here in the fact that the probabilities of classification are determined by the reference parameter of the blips, i.e., the parameter that has the greatest information, and the other auxiliary parameters were determined only at the time of classification.

We will limit the total number of classified objects so that the amount of information that is perceived by the operator in one presentation will not exceed the limiting volume, which he is capable of processing during the time of one presentation.

We will assume that the operator knows beforehand what classes of targets are seen and what the relationships are between the parameters of blips produced by targets of the given classes.

We will assume that the probabilities of correct and erroneous classification of the targets are determined by the same reference parameter of blips (brightness, for example).

We will limit the number of classes of targets to be analyzed to two: class X and class Y.

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USSR                                         UDC 615.371:576.858.21].072

MAD'YAROVA, R. S., NIKOLAYEVA, N. V., MOROGOVA, V. M., and GIL'DINA, S. S.,
Ufa Scientific Research Institute of Vaccines and Sera imeni I. I. Mechnikov

"Determination of Specific Antirabies Vaccine Activity by the Degree of
Antibody Adsorption"

Abstract: The long testing time and variability involved in the Habel and NIH
methods for determining immunogenicity of antirabies vaccines necessitated
development of a new method employing antibody adsorption by the vaccine.
Antibody adsorption was found to be optimum when a mixture of vaccine and
gamma-globulin was kept at $4^{\circ}C$ for 20 hours followed by 1 hour at $37^{\circ}C$, or at
$37^{\circ}C$ for 3 hours. Immunogenicity of Moskva strain and CVS standard virus
vaccines was tested by this method in comparison with a reference vaccine. No
significant differences were found. Next the 3 methods were compared in tests
with Fermi vaccine. Variation in the revealed immunogenicity was statistically
insignificant. Thus use of the new method is recommended, particularly because
it requires half the testing time needed for the Habel and NIH methods.

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TITLE--ANTIGENIC ACTIVITY OF DRY SUCROSE ANTIRABIC VACCINE FROM SHEEP
   BRAIN -U-
AUTHOR-(04)-MOROGOVA, V.M., GILDINA, S.S., AKCHURINA, A.B., FILIMONOVA,
   YE.M.
COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, PP 197-199

DATE PUBLISHED-------70


SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VIRAL VACCINE, RABIES, ANTIGEN, BRAIN




CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0732        STEP NO--UR/0402/70/000/002/0197/0199

CIRC ACCESSION NO--AP0108938
                    UNCLASSIFIED

CIRC ACCESSION NO--APO108938

ABSTRACT/EXTRACT--(U) GP-O-  ABSTRACT.  THE DYNAMICS OF VIRUS NEUTRALIZING
ANTIBODY WAS STUDIED IN SERATAKEN FROM 30 SUBJECTS RECEIVING A COMPLETE
COURSE OF VACCINATIONS WITH COMMERICAL DRY ANTIRABIC VACCINE.  A HIGH
ANTIGENIC ACTIVITY OF THIS PREPARATION WAS ESTABLISHED.

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UNCLASSIFIED

USSR                              UDC:  681.3

GILENKO, V. V.

"A Device for Computer Input of Graphic Data"

V sb. Elektronno-vychisl. tekhn. i programmir. (Computer Technology and Programming--collection of works), vyp. 3, Moscow, "Statistika", 1970, pp 71-73 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V697)

Translation:  The device provides reliable coding of graphs from carriers which have natural blemishes in the form of spots, scratches, etc.  A two-speed magnetic-tape accumulator is used for storing the information being coded.

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USSR                              UDC:   533.6:621.4

GILERSON, A. G.

"Determining the Optimum Coefficient of Reversal of Thrust Reversers for
Passenger Aircraft Engines"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1970,
vyp. 127, pp 28-34 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B449)

Translation:  A simple empirical method is proposed for determining the
overall required negative thrust and the required coefficient of reversal
based on average statistical data on the magnitude of the "reversible
thrust capacity" (ratio of the overall thrust of the reverser to the weight
of the aircraft) of modern passenger airplanes with thrust reverser.  This
ratio for various types of aircraft ranges from 0.24 to 0.30 (the larger
figures apply to aircraft of internal lines).  Graphs are plotted for the
required number of engines with thrust reverser as a function of the coef-
ficient of reversal.  A. S. Malyutin.

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USSR

UDC 615.21+615.22]:547.785.5].012.1

PECHENINA, V. M., MUKHINA, N. A., ABATUROVA, K. A., GREENSHCHIKOVA, L. P., MIKHAYLOVA, T. V., KURILENKO, V. M., and GILEV, A. P., Novokuznetsk Scientific Chemical-Pharmaceutical Research Institute

"Synthesis and Investigation of Some Benzimidazole Derivatives. V. Esters and Ethers of 1-Hydroxymethyl- and 1-(2-Hydroxyethyl)-benzimidazoles"

Abstract: To an alkoxide obtained from 0.04 g-atom of metallic Na and corresponding alcohol, 0.02 mole of 1-chloromethylbenzimidazole hydrochloride is added with stirring, the mixture is left standing for several hours, the precipitate is removed by filtration, the filtrate is evaporated, and the oily residue is dissolved in ethanol. Upon addition of an alcoholic acid solution the respective salts of 1-hydroxymethylbenzimidazole ether is precipitated. To obtain esters of 1-(2-hydroxyethyl)benzimidazole, a previously described method was used. The compounds are moderately toxic, affecting slightly the central nervous system, lowering rectal temperature, and disturbed coordination in some animals. Specific physiological effects of select representatives are reported, but no general trend is noticeable.

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TITLE--VISCOSITY AND MODULUS OF ELASTICITY OF FLUOROBERYLLATE GLASSES IN
  THE TWO PHASE REGION -U-

AUTHOR--GILEV, I.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 389-90

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GLASS VISCOSITY, MODULUS OF ELASTICITY, FLUOROBERYLLATE GLASS,
  PHASE ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0696          STEP NO--UR/0363/70/006/002/0389/0390

CIRC ACCESSION NO--AP0113563
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0113563

ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  THE SP. FEATURES OF 2 PHASE
GLASSES OF BINARY SYSTEMS ARE DISCUSSED, INCLUDING THE PROPERTIES AND
THE COMPN. OF THE 2 DISTINGUISHABLE PHASES.  PREVIOUS WORKS HAVE SHOWN
THAT MICROSEGREGATION IS VERY PRONOUNCED IN FLUOROBERYLLATE GLASSES OF
BINARY ALKALI SYSTEMS WITH 70-100 MOLE PERCENT $BEF_2$ PRESENT.  SUCH
MICROSEGREGATION IS MOST PRONOUNCED IN THE LIF-$BEF_2$, NAF-$BEF_2$,
AND KF-$BEF_2$ SYSTEMS.  HOWEVER, ON THE PHASE DIAGRAMS OF THESE
SYSTEMS THE 2 PHASE REGION HAS GENERALLY NOT BEEN MARKED.  TO CORRECT
FOR THIS SITUATION WAS ONE REASON THE PRESENT WORK WAS UNDERTAKEN.  ONE
CAN CONSIDER THE MICROSEGREGATION PROCESSES IN GLASSES ANALOGOUS TO SUCH
PROCESSES AS OBSERVED ON PHASE DIAGRAMS FOR THE CORRESPONDING CRYST.
SYSTEMS.  THE SMOOTH CHANGE OF THE PROPERTIES WITH A CHANGE IN THE
COMPN. SHOULD THEN ABRUPTLY END IN THE 2 PHASE REGION.  THE PROPERTIES
OF GLASSES IN THIS REGION WILL BE DETD. BY THE PREDOMINANT PHASE
PRESENT.  THE TRANSITION FROM THE PROPERTIES OF 1 PHASE MORE RICH IN BEF
$SUB2$ TO THE PROPERTIES OF THE OTHER PHASE (WHICH IS RICH IN KF)
TERMINATES AT THE CONTENT IN THE GLASS OF 15-20 MOLE PERCENT KF.  THUS,
THE 2 PHASE DOME AS SHOWN ON THE VISCOSITY ISO COMPN. LINES IS
RELATIVELY SYMMETRICAL.  THE ELASTICITY MODULUS FOR 2 PHASE GLASS AT
ROOM TEMP. DEPENDS TO A LARGE DEGREE ON THE QUANT. RATIO BETWEEN THE
PHASES, SINCE IT IS DETD. NOT ONLY BY THE PROPERTIES OF THE INDIVIDUAL
MICROSEGREGATION REGIONS, BUT ALSO BY THE INTERACTION BETWEEN THEM.  NO
COMPDS. WERE FOUND TO HAVE FORMED IN THE COMPN. REGION EXAMD. (UP TO 30
MOLE PERCENT KF).  ANALOGOUS CURVES WERE OBTAINED FOR GLASSES OF THE
CSF-$BEF_2$ SYSTEM.
                        UNCLASSIFIED

GILEV, Yu. M.

# DISTINCTIVE FEATURES IN THE STRUCTURE OF CYBERNETIC MODELING OF THE DIAGNOSTIC PROCESS IN THE LIGHT OF LENIN'S REFLECTION THEORY

Cybernetics, which is a relatively young scientific discipline, expounded, in the course of its appearance and development, a number of important philosophical and methodological problems. Many philosophers and naturalists are engaged in finding solutions to them in the last few years. Their solution is rather complex. However, the work already done indicates conclusively that the basic philosophical tenets of V.I. Lenin, his classical analysis of philosophical problems in natural science of the 20th Century, the teaching on reflection as a universal property of matter, the positions on the dialectical nature of the process of reflection and the process of cognition, the conceptions pertaining to the active nature of the latter, and others played a definite part in the outlook and methodological interpretation of the results and prospects of development of this science.

The dialectical position of V.I. Lenin in gnosiology which considers cognition as a complex and contradictory process of moving from ignorance to knowledge, from more superficial to deeper knowledge has decisive significance in order to characterize the philosophical essence of such a popular cognitive procedure in modern science as modeling, and particularly to understand the latest modification of this old method of cognition which is related to cybernetics.

Before our eyes, the method of cybernetic models is extending to more and more branches of learning and practice. Our objective does not include a detailed description of all of the features of cybernetic models.

We should merely like to call attention on one of its features, structure, and this as it relates to the diagnostic process.

It must be borne in mind that V.I. Lenin, in his "Philosophical Notebooks," wrote that "movement of cognition toward an object can only proceed dialectically; to step back in order to hit more accurately, to retreat in

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Pharmacology and Toxicology

GILEV, Yu. V., and IZMOZHEROV, N. A.

"Study of the Antineoplastic Effectiveness of Several Diphenylcarbinol Derivatives"

Translation: Study of the radioprotective properties of diphenylcarbinol (I) derivatives possessing one to three radicals of $N(CH_3)_2$ and $N(C_2H_5)$ joined to the I molecule in the P position. There is a correlation between the number of donor radicals and the radioprotective effect in going from two radicals to three.

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1/2     011                     UNCLASSIFIED            PROCESSING DATE--30OCT70
TITLE--EFFECT OF THE DEGREE OF DISPERSION AND COMPOSITION OF SILICEOUS
    FILLERS OF RUBBER ON FILLER REINFORCING ACTION -U-
AUTHOR-(04)-KUKHARSKAYA, E.V., CHIGAREVA, G.G., SKORIK, YU.I., GILEVA,
    K.G.
COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 21-3

DATE PUBLISHED--------70


SUBJECT AREAS--MATERIALS

TOPIC TAGS--FILLER, SYNTHETIC RUBBER, SILICA, ALKALINE EARTH METAL,
    STYRENE/(U)SKMS30RP SYNTHETIC RUBBER, (U)AEROSIL SILICEOUS FILLER,
    (U)ULTRASIL VN3 SILICEOUS FILLER, (U)HISIL SILICEOUS FILLER, (U)BS50
    SILICEOUS FILLER, (U)ZEOLEX25 SILICEOUS FILLER


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0838          STEP NO--UR/0138/70/029/002/0021/0023

CIRC ACCESSICN NO--AP0124505
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0124505
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RUBBER MIXT., CONTG. SKMS-30RP
   AS ITS MAIN COMPONENT, WAS FILLED WITH SEVERAL SILICEOUS FILLERS, E. G.,
   AEROSIL 300, ULTRASIL VN-3, HI-SIL, SILOXIDE, BS-50 (I), ZEOLEX-25 (II),
   AND ZEOLEX-23 (III), AND THE MIXT. WAS EXAMD. MICROSCOPICALLY. NO
   CORRELATION WAS OBTAINED BETWEEN THE DEGREE OF DISPERSION OF A FILLER
   AND ITS REINFORCING EFFECT. THE REINFORCING EFFECT OF THE FILLERS WAS
   INVERSELY PROPORTIONAL TO THE CONTENT OF ALK. AND ALK. EARTH CATIONS;
   THUS III, II, AND I WERE THE LEAST EFFECTIVE FILLERS.         FACILITY:
   INST. KHIM. SILIKATOV IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR                    ι           UDC 616.2-022.12.12-097:543.426

MAKSIMOVICH, N. A.; BUZHIYEVSKAYA, T. I.; VASINA, A. G.;
GILEVICH, YE. V.; Kiev Scientific Research Institute of Infec-
tious Diseases, Ukrainian SSR Ministry of Public Health

"Experimental Use of Immunofluorescence in the Study and
Diagnosis of Respiratory Viral Infections"

Abstract:  Data were collected on the use of immunofluorescence
in the etiological diagnosis of acute respiratory infections.
During 1964-1968, data from 4,035 patients and 101 autopsies
were collected (3,495 cases in the interepidemic period and
540 cases in influenza foci, foci of parainfluenza, and adeno-
virus diseases). The material chosen for the study must contain
a sufficient quantity of cells sensitive to the viruses to be
studied.  Smears from the mucous membranes of the nose and from
nasopharyngeal washings were studied by phase-contrast and
luminescence microscopy.  Some photomicrographs of cells of the
columnar epithelium are shown.  Cells were treated with poly-
valent influenza and parainfluenza globulins labeled with
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USSR

MAKSIMOVICH, N. A., et al, <u>Vrachebnoye Delo</u>, No 4, Apr 71, pp
143-147

fluorescein isothiocyanate, with anti-adenovirus rabbit serum
and with antirabbit globulin labeled with fluorescein isothio-
cyanate. The specific luminescence of the centrosphere, the
nuclear membrane, and cytoplasm was studied. A tropism of in-
fluenza, parainfluenza virus and adenoviruses for epithelial
cells of the human respiratory tract was found. A seasonal
character of influenza and parainfluenza infections was observed:
a certain rise in the incidence of infections was found in the
January-March and October-December period. Sporadic outbreaks
of acute respiratory diseases were relatively rare (up to 2%)
during the summer months. Adenovirus infections, on the other
hand, did not exhibit any pronounced seasonal character. In
some cases, mixed influenza-adenovirus infections were observed.
The virus was localized only in cells lining the trachea, the
smaller branches of bronchi and bronchioles, or it was detected
only in impressions from the lungs in cadavers.

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MAKSIMOVICH, N. O., GILEVICH, Ye. V., VASINA, A. G., PERVACHENKO, S. V., and
RYBINSKAYA, L. N., Kiev Scientific Research Institute of Infectious Diseases

"Changes in Cells Induced by Certain Parainfluenza Viruses"

Abstract:  The cytopathic effects of types I, II, and III parainfluenza viruses
on primary trypsinized monkey kidney cultures were studied.  Enlargement of the
nuclei and nucleoli, accumulation of RNA protein in the nucleoli and cytoplasm,
disintegration of the chromatin and further changes in the shape of the nucleus,
and formation of symplasm (varying according to the infectious dose of virus
per cell) were observed.  Eosinophilic inclusions in the cytoplasm were common
but are not specific to viral infection of cells, since they appear in nonin-
fected cultures as well.  Immunofluorescence revealed the presence of viral
antigen in the infected cells only during the first 3 days following inocula-
tion.  In 1- and 2-day- old mice, the epithelial cells of the respiratory tract
showed marked proliferation, desquamation, and formation of cells with 3 and 4
nuclei.  The perinuclear part of the cytoplasm fluoresced during the first 3
days after infection.  The prolonged survival of the culture after infection
1/2

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MAKSIMOVICH, N. O., et al, Mikrobiologicheskiy Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 466-472

was evidence of the weak cytotoxic effect of the parainfluenza viruses.  This phenomenon was most pronounced in the symplasm, causing it to decrease and then disappear within 4 days.

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USSR
GILINSKIY, I. A. and SULTANOV, M. B.

"Ultrasonic Absorption in Semimetals"

Abstract: Finding that the phenomenological theory of the absorp-
tion of ultrasonics in semimetals does not take into account the
effect of electrical eddy fields and that the theory is therefore
limited, the authors advance a more consistent theory to replace
it.  A qualitative explanation is given for the effect of quasi-
neutral density oscillations on ultrasonic absorption,
and it is noted that in semimetals, as distinct from metals with
a single-bond Fermi surface, the tensor of deformation potential
is practically independent of the impulse.  Kinetic equations ob-
tained through consideration of the double-zone model of the semi-
metal are solved in terms of the local balanced Fermi function,
and an expression is found for the absorption coefficient as a
function of the magnetic field in which the semimetal is placed.
Curves are plotted for that part of the absorption connected with
electronic pressure as a function of the frequency of the ultra-
sonic oscillations, the magnetic field intensity, and the various
relationships among the characteristic parameters.  The authors
1/2

USSR                                          UDC: None

GILINSKIY, I. A., <u>Fizika Tverdogo Tela</u>, vol 14, No 7, 1972, pp
1905-1914

2/2

USSR

RYAZANTSEV, K. A., GILINSKIY, I. A. (Siberian State Scientific Research Insti-
tute of Metrology; Institute of the Physics of Semiconductors, Siberian Depart-
ment of the USSR Academy of Sciences, Novosibirsk)

"Surface Quasi-Static Oscillations in Magnetics"

ABSTRACT:  Surface magnetostatic oscillations on a magnetic-vacuum boundary are
considered.  A qualitative study of the general dispersion equation for surface
oscillations on the boundary of a gyrotropic magnetic is made, and conditions
are found under which the spectrum of surface oscillations is superimposed on
or lies above the spectrum of spin waves in an unlimited magnetic.  Particular
cases of a ferrite with two magnetic sublattices and an antiferromagnetic are
considered.  It is shown that one of the branches of the surface oscillations
in the antiferromagnetic is superimposed on the spectrum of spatial oscillations.
In the case of a ferrite for that of the branch which lies in the SHF range the
results coincide with those obtained earlier by Damon and Eshbach (J. Appl.
Phys., 31, 332, 1960).
1/1

USSR

GILINSKIY, S. M.

"Linearized Supersonic Nonequilibrium Flow of an Inflammable Gas Mixture Near a Wedge"

Translation: A solution is given of a problem of the streamline flow of an inflammable mixture about a wedge; in this solution, account is taken of the course of a single irreversible reaction. In the general case the solution is represented in the form of a series. For some particular values of the order of the reaction this series is summated, and the solution is expressed by means of finite algebraic functions. An analysis is made of the influence of various laws of heat supply to the gas on the flow pattern behind the shock wave. In particular, it is found that the solution may have an oscillatory nature. The amplitude and frequency of these oscillations decrease downstream. The physical nature of the originating oscillations is discussed, as well as their sensitivity to the properties of the inflammable mixture, to the Mach number of the mainstream, and to the angle of the wedge. Nine references.
1/1

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USSR

GILINSKIY, S. M., and KHAYKIN, M. L.

"Application of the Boundary-Layer Method to the Solution of Problems Concerning the Movement of Gas Mixtures with Exotic Reactions"

Translation: Solutions of problems dealing with the nonequilibrium hyperonic flow of gas in the   vicinity of a wedge and a cone, as well as in front of a moving piston, are obtained by means of the boundary-layer method.  Into the equations of gas dynamics for a two-dimensional or axisymmetrical flow, a term is entered which characterizes the supply of heat to the gas as a result of the course of a single irreversible reaction, the rate of which depends ex-ponentially upon the temperature.  The solution for two-dimension and axisymme-trical flows is sought in the form of series with respect to the powers of a small parameter, which depends only upon the adiabatic exponent of the gas.  An illustration shows the relative position of shock waves for the wedge and the cone, for an equilibrium and frozen reaction and for a nonequilibrium reaction. Pressure profiles on the wedge and on the cone are constructed.   Solutions for

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USSR                                              UDC 533.6.011

GILINSKIY, S. M., ZAK, L. I.

"Hypersonic Nonstationary Flow of a Fuel Gas Mixture Around Bodies of Different Shape"

V sb. 3-y Vses. simpozium po goreniyu i vzryvu, 1971 (Third All-Union Symposium on Combustion and Explosion, 1971--collection of works), Chernogolovka, 1971, pp 146-148 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B190)

Translation:  A study was made of the pulsation nonstationary combustion conditions occurring during hypersonic flow of a reactive gas around the front part of blunt bodies and a wedge.  The interaction of the blunt body with the centered expansion and compression waves is investigated.  As a result of numerical calculations of the two-dimensional flows it was established that the introduced disturbances can lead to the occurrence of autooscillations of the shock wave and gas parameters behind it with an amplitude and frequency depending on the magnitude of the activation energy.  The region of stability with respect to small and finite disturbances turns out to be appreciably larger for the two dimensional flow than in the case of one-dimensional detonation.  The effect of nonstationary disturbances on purely supersonic flows is studied in the example of a wedge undergoing small oscillations near the edge.  It is demonstrated that the vibrations of the wedge cause analogous oscillations of

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USSR

GILINSKIY, S. M., et al., 3-y Vses. simpozium po goreniyu i vzryvu, 1971, Chernogolovka, 1971, pp 146-148

the shock wave which are out of phase and smaller with respect to amplitude. It is noted that the amplitude and frequency of the gas parameter oscillations depend to a great extent on the magnitude of the adiabatic exponent.

2/2

TITLE--SOLUTION TO THE PROBLEM OF THE MOTION OF A SPHERE IN A COMBUSTIBLE
  GAS MIXTURE -U-
AUTHOR--GILINSKIY, S.M.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA,
  JAN.-FEB. 1970, P. 134-142
DATE PUBLISHED-------70


SUBJECT AREAS--PHYSICS

TOPIC TAGS--SUPERSONIC FLOW, MOTION MECHANICS, COMBUSTION GAS DYNAMICS,
  APPROXIMATE SOLUTION, MODEL, DETONATION SHOCK WAVE, ADIABATIC FLOW,
  OSCILLATION, FREE OSCILLATION


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1778         STEP NO--UR/0421/70/000/000/0134/0142

CIRC ACCESSION NO--AP0112764
                         UNCLASSIFIED

CIRC ACCESSICN NU--AP0112764

ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.   ANALYSIS OF THE MOTION OF A SPHERE
AT HIGH SUPERSONIC VELOCITIES IN A COMBUSTIBLE GAS MIXTURE OF GIVEN
TEMPERATURE AND PRESSURE.   AN APPROXIMATE SOLUTION FOR A TWO FRONT MODEL
OF A DETONATION WAVE IS OBTAINED FOR THE CASE OF CONSTANT DENSITY.   THE
SOLUTION IS ANALOGOUS TO LIGHTHILL'S (1957) SOLUTION FOR CONVENTIONAL
ADIABATIC FLOW.   THE SOLUTION TO THE STEADY STATE PROBLEM IS SHOWN TO BE
USEFUL FOR ANALYZING NONSTATIONARY OSCILLATIONS ACCOMPANYING THE MOTION
OF BODIES IN COMBUSTIBLE GAS MIXTURES.

UNCLASSIFIED

USSR                                        UDC:  621.317.342

GILIS, A. A.

"Analysis of Errors in Amplitude Detectors in the Case of Measurement of
the Frequency Characteristics of Group Delay Time, and Methods of Reducing
These Errors"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Re-
ports of the All-Union Scientific and Technical Conference on Radio Engineer-
ing Measurements. Vol. 2), Novosibirsk, 1970, pp 79-81 (from RZh-Radiotekhnika,
No 12, Dec 70, Abstract No 12A386)

Translation:   The author analyzes errors of the so-called Nyquist method
of measuring the frequency characteristics of group delay time which arise
in the AM detector due to the variation of its parameters, mainly the in-
ternal resistance.  Parasitic phase displacements in AM detectors sometimes
exceed the measured quantities, which in turn leads to inadmissible measure-
ment errors.  Measures are indicated for reducing the phase error -- use of
high-capacitance blocking condensers, use of a resistor with series-con-
nected tank circuit as the load.  It is shown in an experiment with a paral-
lel AM detector that phase displacements in the envelope of the order of
several degrees occur when the input level changes by 30 DB, whereas they
may be reduced to hundredths of a degree with a tank.  Bibl. 5 titles.  E. L.
1/1

USSR

GILIS, R. R.

"Estimates of Regression Factors in the Multidimensional Case"

Lit. Mat. Sb. [Lithuanian Mathematics Collection], 1972, Vol 12, No 4, pp 31-36 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V243, by the author).

Translation: Suppose we have a random process

$$\xi(t) = a_1 \theta_1(t) + \ldots + a_N \theta_N(t) + \Lambda(t), \; t \in T,$$

where $\Lambda(t)$ is a multidimensional process, stable in the broad sense, with zero mean and matrix of spectral densities $f_0(\lambda)$; $\theta_1(t), \ldots, \theta_N(t)$ are certain unknown function columns, $a_1, \ldots, a_N$ are unknown numerical parameters (regression factors), which must be estimated by observing the realizations of process $\xi(t)$ in interval T. This work generalizes certain results of

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USSR

A. S. Kholevo relating to investigation of properties of linear unbiased "pseudo-optimal" estimates $\hat{\alpha}_1, \ldots, \hat{\alpha}_N$ for the multidimensional case. These estimates are constructed using a certain matrix of spectral densities $f(\lambda)$ $(f(\lambda) > f_0(\lambda))$ and are, roughly speaking, the optimal estimates in relationship to process $\Delta(t)$ with spectral density matrix $f(\lambda)$.

The case is studied when $f(\lambda) = \dfrac{1}{2\pi} (R^*(i\lambda)R(i\lambda))^{-1}$, where $R(z)$ is a certain matrix polynomial (least squares estimates are produced when $R(z)$ is a unit matrix). Explicit formulas are given for the R estimates; conditions are found under which they are consistent.

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USSR                                          UDC 528.716.1.021

GILL', I. L., and GERTSENOVA, K. N.

"Test Results of the Airplane Radiotelemeter TsNIIGAiK (Central Scientific Research Institute of Geodesy, Aerial Survey and Cartography) in Mountain Region"

Moscow, Geodeziya i Kartografiya, No 6, 1972, pp 40-43

Abstract:  The airplane radiotelemeter of the TsNIIGAiK was for the first time tested in an experimental mountain region in the year 1970, in order to determine the working characteristics of the apparatus in regions with possibly increased reflection of radio waves from earth's surface. The altitude differences of check points of the 250 km$^2$ experimental section comprised 1200 m. Results of measuring the basis from 5000 m altitude were used for rating the exactness of radiotelemeter measurements at small distances ($\sim$25 km) between airplane and ground stations. The error in measuring the basis, determined from deviations from the mean value, was $\pm1.8$ m and according to deviations from the geodetic basis length $\pm2.1$ m. The test results of the airplane radiotelemeter in the mountain region indicate the possibility of its use for establishing a planned basis of topographic survey of mountain regions in 1:25000 scale. The distance between the airplane and ground stations has not to be less than 40-50 km and there have not to be obstacles for the passing of radio waves on the ray path airplane-ground station.  Two tables, two biblio. refs.
1/1

TITLE--IMPROVEMENT IN PRODUCTION TECHNOLOGY OF DEFLUORINATED PHOSPHATE -U-

AUTHOR-(02)-KARPOVICH, E.A., GILLER, M.YE.

CCUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (2), 44-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--PHOSPHATE, FLUORINE COMPOUND, INDUSTRIAL FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0016          STEP NO--UR/0436/70/000/002/0044/0046

CIRC ACCESSION NO--AP0119012
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0119012
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  IN A SERIES OF EXPTS. UNDER
  INDUSTRIAL CONDITIONS IN FURNACES OF 100 M LENGTH AND 3.2 M DIAM. AT
  1220-40DEGREES AND WITH AN OUPUT CAPACITY OF 3.1-3.8 TONS-HR THE OPTIMAL
  CONDITIONS FOR A COMPLETE DEFLUORINATION OF APATITE CONCNS. WERE ADDN.
  OF 3.2-3.8PERCENT SIO SUB2 AND 1.3-1.7PERCENT P SUB2 O SUB5 IN THE FORM
  OF 20PERCENT PHOSPHORIC ACID.          FACILITY:  SUM. KHIM. KOMB, SUMY,
  USSR.

UNCLASSIFIED

USSR                                    UDC 615.217.34.012.1+615.217.34.015.4

SOKOLOV, G. P., VITOLIN', R. O. and GILLER, S. A., Institute of Organic
Synthesis, Academy of Sciences Latvian SSR, Riga

"The Synthesis and Pharmacological Properties of Hydrochlorides and Methiod-
ides of Aminomethyl Derivatives of 2-[diphenyl (oxy)methyl]-1,3-Dioxolane"

Abstract:  Five pairs of cis-trans isomers of 1,3-dioxalone derivatives of
diphenylglycolaldehyde were synthesized.  The diethyl acetal of diphenyl-
glycolaldehyde was transacetylated with racemic 1-0-n-tosylglycerine, treated
with secondary amines at temperatures to 150°, and precipitated as hydro-
chlorides or methiodides.  Proton magnetic resonance spectra of these com-
pounds were said to show that proton shielding or deshielding on the aniso-
tropic groups can be used to determine structural conformation.  While none
of the compounds possessed nicotinolytic properties, they all had muscarinoly-
tic properties in mice and peripheral cholinolytic activity in isolated
guinea pig intestine.  Hydrochlorides had greater central activity than
methiodides, and dimethylamine and diethylamine derivatives were more active
than heterocycles.  Cis isomers were found to be more effective than trans.
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· · USSR

SOKOLOV, G. P., KREHIS, A. A., VEVEHIS, M. M., and GILLER, S. A., Institute
of Organic Synthesis, Academy of Sciences Latvian SSR, Riga

UDC 615.216.5:547.484.451].012.1

"The Synthesis and Curariform Properties of Quaternary Ammonium Derivatives
of Cyclic Acetals of Levulinaldehyde and Levulinic Acid"

Abstract: Studies were conducted on the curariform properties of quaternary
ammonium derivatives synthesized from levulinaldehyde in a manner analogous to
that employed for succinaldehyde, except that 2-methyl-2,5-dimethoxytetrahydro-
furan was used in the reaction. Quaternary ammonium derivatives of levulinic
acid were obtained by reacting 3-(2'methyl-4'-chloromethyl-1',3'-dioxolanil-2')
propionic acid with secondary amines, with the initial formation of the corres-
ponding salt and, on gradual heating from 100 to 150°, the Cl atom on the
chloromethyl group was replaced by an amino group. The salt was separated from
the concomitantly formed hydrochloride salt of the secondary amine by dissolving
it in ethyl acetate, and then reacting it with chloroethylamines. A diiodo-
methylate derivative of levulinaldehyde showed the greatest curariform activity
of the deivatives that were obtained which, in cats, exceeded that of D-
tubocurarine 2-fold, but was 11-fold less than that of dioxonium. The duration
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USSR

SOKOLOV, G. P., et al., Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973,
pp 8-13

of action of these derivatives was also very short, presumably due to inactiva-
tion by pseudocholinesterase.  Biological evaluation of the derivatives on cats
showed that they possessed either depolarizing, antidepolarizing, or mixed
type of curariform activities.

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USSR

GILLER, S. A., Director, Order of the Labor Red Banner Institute of Organic
Synthesis, Academy of Sciences Latvian SSR

"The Use of Pesticides and Measures for the Control of Contamination of the
Environment"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 4, 1972, pp 34-43

Abstract:  Because the use of pesticides, particularly those with high persis-
tence, constitutes a danger to human health and to useful wild birds and
animals, application of precise analytical methods for the determination of
residual amounts of pesticides in the environment and in foodstuffs is essential.
One of the most effective methods for determinations of this type is gas-
liquid chromatography.  Since 1967, work on the determination of residual
amounts of pesticides has been conducted under the direction of M. V. Shimanskaya,
Candidate of Chemical Sciences by a special analytical group at the Institute
of Organic Synthesis, Academy of Sciences Latvian SSR.  An instrument for gas-
liquid chromatography determinations of this type has been developed by members
of this group M. M. Kalnyn', G. G. Konstante, and L. F. Bulenkova, the sensi-
tivity of which with respect to e.g., hexachlorane is $10^{-3}$ g.  An  electronic

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USSR

GILLER, S. A., Izvestiya Akademii Nauk Latviyskoy SSR, No 4, 1972, pp 34-43

computer arrangement is attached to the instrument which integrates the curves obtained and prints on a tape figures corresponding to the amounts of various pesticides detected. A thermionic, microcoulombmetric, or electron capture detector can be used in connection with the method in question. A thermionic detector is best suited for organophosphorus compounds. The principal experience in the work by the group mentioned was acquired with an electron capture detector, by using which the content of persistent organochlorine insecticides in foodstuffs such as milk, butter, etc. was determined. Within five years following the prohibition of the use of DDT in the Latvian SSR, its content in milk and butter decreased by a factor $> 100$. In many cases DDT was not present at all. By combining gas-liquid chromatography with mass spectrometry, one could determine the elemental composition of individual pesticides and thus assign accurately individual peaks on the chromatogram to definite pesticides. The rodenticides zinc phosphide, thallium sulfate, and sodium fluoroacetate poison wild birds and animals. The use of sodium fluoroacetate has now been prohibited in the Latvian SSR or the whole of the USSR. As substitutes for these rodenticides, substances of the ratindan group were developed in the Latvian SSR by B. Ya. Zelmene under the direction of the 2/4

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USSR

GILLER, S. A., Izvestiya Akademii Nauk Latviyskoy SSR, No 4, 1972, pp 34-43

deceased academician G. Ya. Vanaga. These substances are now being produced
on an industrial scale. Under the direction of M. G. Voronkov, Corr. Member
Acad. Sciences USSR, and his coworker G. I. Zelchan substances of the arylatran
class were developed in the USSR (N. N. Mel'nikov, Zh. Vsesoyuzn. Obshch.
imeni D. I. Mendeleyeva, 1968, 3, 248) which are now being tested as rodenticides
in the USA. Rodents poisoned by them or their carcasses cannot cause poisoning
of wild or domestic animals, because these substances are hydrolyzed rapidly
in the organism of the rodents. At the Institute of Organic Synthesis,
Academy of Sciences Latvian SSR, work is being conducted under the direction
of E. Ya. Lukevits on the production of N,N-dimethyl-N'-phenyl-(N'-fluordichloro-
methylthio)sulfamide, a new agricultural fungicide which has a low toxicity
to warm-blooded animals and bees. It will be produced at the experimental
plant of the institute that is now under construction. Also at this institute,
B. V. Kurgane under the direction of Corr. Member Ya. P. Tsinovskiy developed
in work carried out in collaboration with the Institute of Biology, Academy
of Sciences Larvian SSR, novel attractants in the control of agricultural
posts. A special conference on this biological method of control to be held
at Riga together with eh all-Union Academy of Agricultural Sciences imeni
3/4

USSR

GILLER, S. A., Izvestiya Akademii Nauk Latviyskoy SSR, No 4, 1972, pp 34-43

V. I. Lenin has been planned for the first half of 1972.    Because no
effective substances exist for the control of cotton wilt, cercosporosis
(leaf spot) of sugar beets, and the grey beet weevil, research is being
conducted with the aim of developing such substances.

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USSR

VITUL'SKAYA, N. V., VOL'f, L. A., GILLER, S. A., YEGOROV, B. A., KOTETSKIY,
V. V., PLOTKIN, L. L., and YANOVSKAYA, N. B., Leningrad Institute of Textile
and Light Industry imeni S. M. Kirov; Institute of Organic Synthesis, Academy
of Sciences Latvian SSR

"New Fibers for Medical Use"

Abstract:  In order to increase the X-ray contrast effect of surgical suture
materials, films and fibers were prepared from aqueous solutions of polyvinyl
alcohol (PVA) with addition of barium sulfate in various concentrations
(0.5-20%).  The best contrast was obtained with 150 $\mu$ PVA film containing 10
and 20 $BaSO_4$.  A lower dose (1%) of $BaSO_4$ did not produce desired results.
Sutures were prepared from PVA with admixture of polyformaldehyde, $BaSO_4$,
barium chloride, and collargol.  The prepared fibers were thermostabilized
at 220°C for 10 min and acetylated in water bath containing 20% β-(5-nitro-
furyl-2)-acrolein and 20% $H_2SO_4$ at 70°C for 2 hrs.  The ready to use fibers
were mechanically strong, stable in hot water (boiling for 1 hr produced only
10% shrinkage), and possessed high antimicrobial properties, especially toward
1/2

USSR

VITUL'SKAYA, N. V., et al., Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 145-149

Staphylococcus aureus, Escherichia coli, Trichophyton group, and other bacteria. Good results were obtained with polyformaldehyde fibers with 5 and 10% BaSO4, PVA with iodine-containing organic compounds. The obtained fibers were used for the manufacturing of such surgical materials as sutures, cotton, nets, contraceptive devices, etc., which presently are undergoing medical testing.

2/2

USSR

VOL'F, L. A., GILLER, S. A., KOTETSKIY, V. V., MEOS, A. I., PLOTKIN, L. L., and VITUL'SKAYA, N. V., Leningrad Institute of Textile and Light Industry imeni S. M. Kirov; Institute of Organic Synthesis, Academy of Sciences Latvian SSR; Leningrad Sever Manufacturing Society
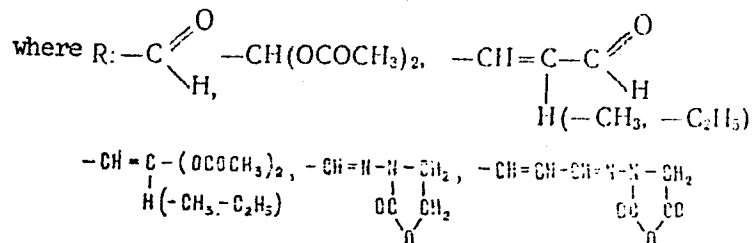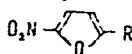
"Antimicrobial Fibers Produced From Compounds of Nitrofuran Series"

Riga, Fiziologicheski Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 150-154

Abstract:  Acetylation pf polyvinyl alcohol (PVA) fibers with aldehydes of 5-nitrofuran series resulted in fibers capable of producing covalent ionic bonds, or coordination linkage between medicinal substances and polymers.  The nitrofuran compounds used in this work had the following chemical structure:

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USSR

VOL'F, L. A., et al., Fiziologicheski i Opticheski Aktivnyy Polimernyye
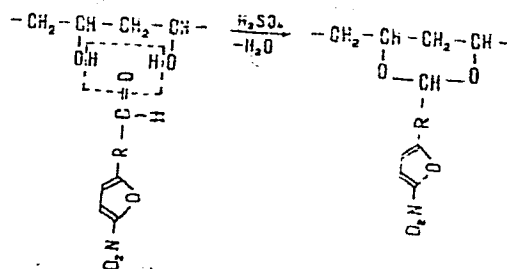Veshchestva, "Zinatne," 1971, pp 150-154

$$O_2N - \text{(furan ring)} - R$$

where $R: -C \overset{O}{\diagup} _{\diagdown H,} \quad -CH(OCOCH_3)_2, \quad -CH=C-C \overset{O}{\diagup} _{\diagdown H}$
$$H(-CH_3, -C_2H_5)$$

$$-CH=C-(OCOCH_3)_2, \quad -CH=N-N-CH_2, \quad -CH=CH-CH=N-N-CH_2$$
$$H(-CH_3,-C_2H_5) \qquad OC \quad CH_2 \qquad\qquad CO \quad CO$$
$$\diagdown O \diagup \qquad\qquad \diagdown O \diagup$$

Among all compounds tested, 5-nitrofurfural (NF), β-(5-nitrofuril-2)-acrolein
(NFA), and their acetates such as furazolidone and furagin were of greatest
interest. The acetylation of PVA fibers with aldehyde of 5-nitrofuran series
is based on the ability of functional groups of polymer to react with carbonyl
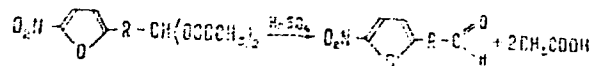groups and to form acetylcyclobuthyleneglycol-1,3 links according to
2/4

USSR

VOL'F, L. A., et al., Fiziologicheski i Opticheski Aktivnyy Polimernyye
Veshchestva, "Zinatne," 1971, pp 150-154

In the case of acetates the reaction proceeds as

The substitution extent of hydroxyl groups of PVA was 18-25 mole % under
optimal acetylation conditions. The obtained fibers were mechanically strong,
stable to sterilization by boiling, contained numerous capillaries, and
possessed high antimicrobial activity. More than 28% of the antibacterial
substances could be incorporated into fibers. Experiments with a natural
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USSR

VOL'F, L. A., et al., Fiziologicheski i Opticheski Aktivnyy Polimernyye
Veshchestva, "Zinatne," 1971, pp 150-154

cellulose were not very successful. Only cellulose esters were capable of
reacting with aldehyde of 5-nitrofuran compounds and forming useful fibers.
Compounds of 5-nitrofuran series were incorporated into polyamide, polyester,
polyformaldehyde, and polypropylene fibers during their molding. The obtained
fibers possessed high antibacterial properties along with good mechanical
properties. All of the fibers can be used for sutures, blood vessel sub-
stitutes, contraceptive devices, and for other medical uses.

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USSR

UDC 632.95

GILLER, S. A., EGERT, V. E., LIYELGALVE, A. A., AVOTA, L. YA., and SHIMAN-SKAYA, M. V.

"Methods of Determining Residual Quantities of Phenazone in Foodstuffs, Soil, Water and Air"

Tr. 2-go Vses. soveshch. po issled ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pesticide Contamination of Foodstuffs, Fodder and the External Environment), Tallinn, 1971, pp 271-272 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N454)

Translation:  In order to determine residual amounts of phenazone, (the specimen is) hydrolyzed with a 40% sodium hydroxide solution in the presence of zinc dust, the resultant aniline is distilled (without water vapor) and diazotized, and coupled with $\alpha$-naphthylamine, and the optical density is determined (on 537 nm). The sensitivity of the method is 1 ng/kg.

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USSR                                          UDC 632.95

GILLER, S. A., BULENKOVA, L. F., KONSTANTE, G. G., KALNIN', N. M., and
SHIMANSKAYA, M. V.

"Gas Chromatographic Separation of Organochlorine Insecticides on Various
Columns"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt.
zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the
Second All-Union Conference on Investigation of Residues of Pesticides, and
Prevention of Pesticide Contamination of Foodstuffs, Fodder, and the External
Environment), Tallinn, 1971, pp 51-53 (from RZh-Khimiya, No 11, Jun 72,
Abstract No 11N403)

Translation: Excellent separation of p,p'-DDT, o,p-DDT, p,p'-DDE and
γ -hexachlorocyclohexane is achieved on SKTFT-50 fluorinated silicone
(Leningrad) applied (5%) on silanized chromosorb W. The relative times of
retention of these pesticides are given as well as those of lindane and eldrin
on various fixed phases.

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USSR

GILLER, S. A. et al., (Editors), Eksperimental'naya i Klinicheskaya Farma-
koterapiya (Experimental and Clinical Pharmacotherapy), No 2, Riga, "Zinatne,"
1970, 113 pp

Abstract:                      Table of Contents

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USSR

GILLER, S. A., Experimental and Clinical Pharmacotherapy, No 2, Riga, "Zinatne,"
1970, 113 pp

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USSR

UDC 547.721'781'821

SALDABOL, N. O., ZELIGMAN, L. L., and GILLER, S. A., Institute of Organic
Synthesis, Acad. Sc. Latvian SSR, Riga

"Aminomethylation of 2-(Furyl-2)imidazo-[1,2-a]-pyridine"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 818-821

Abstract:  Aminomethylation, specifically the morpholino- and piperidinomethyla-
tion of 2-(furyl-2)imidazo-[1,2-a]pyridine occurs principally at position 3 of
the imidazopyridine system, when equimolar quantities of the reagents are used.
With excess formaldehyde and amine the reaction occurs also at position 5 of the
furane ring.  To identify the structure of monomorpholinomethylation product
it was further nitrated to yield 3-morpholinomethyl-2-(5-nitrofuryl-2)
imidazo-[1,2-a]-pyridine (I).  For positive identification, (I) was independently
synthesized by morpholinomethylation of 2-(5-nitrofuryl-2)-imidazo[1,2-a]pyridine.
Structure identification was carried out by m ans of TLC, and IR and UV spectro-
scopical analyses.  The reaction was carried out by dropwise addition of
formalin and morpholine to 2-(furyl-2)imidazo [1,2-a]pyridine in acetic acid,
heating for 3 hrs at 60°, and neutralization with NaOH.

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UDC 615.28:547.75_17.012

USSR

SALDABOL, N. O., ALEKSEYEVA, L. N., BRIZGA, B. A., KRUZMETRA, L. V., and GILLER, S. A., Institute of Organic Synthesis, Riga, Academy of Sciences Latvian SSR

"Synthesis and Antimicrobial Action of Furyl-Substituted Indolizine, Imidazo (1,2-a)pyrimidine, and Imidazo(2,1-b)thiazole"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 7, 1970, pp 20-22

Abstract: Continuing work on the synthesis and study of antimicrobial properties of furyl-substituted heterocyclic condensed systems with apcial nitrogen atoms, the authors obtained (5-R-furyl-2)sub-stituted indolizine (VIa, VId), imidazo(1,2-a)pyridine (VIIa, VIIb, and VIId), and imidazo92,1-b)thiazole (VIIIa-VIIIc and IXa, IXc) (R = H, Br, and $NO_2$) and described their antimicrobial action.

USSR

The minimum concentration of furylazabicycles inhibiting micro-
organismic growth is 100 mcg/ml, while for phenyl analogs it rises
sharply. For example, for 6-phenylimidazo(2,1-b)thiazole and its
n-nitroderivative the minimum concentration inhibiting growth
of Staphylococcus aureus, Salmonella typhi, and Escherichia coli
is 7800 mcg/ml. Thus, replacement of the phenyl with the furyl
group leads to an abrupt intensification of antimicrobial action,
which is intensified still further in the case of the nitrofuryl-
lazabicycles (VIIc, VIIIC and IXc). The strongest bacteriostatic
action is shown by nitrofurylimidazopyridine (VIIc), buts its
aromatic analog 2-p-nitrophenylimidazo/1,z-a/pyridine is only
slightly active.

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1/2     029                 UNCLASSIFIED           PROCESSING DATE--30OCT70
TITLE--MAGNETOPHOTOELASTICITY, PHOTOELASTICITY IN A MAGNETIC FIELD -U-

AUTHOR--HILLAR, K.A.

COUNTRY OF INFO--USSR

SOURCE--EXPERIMENTAL MECHANICS, VOL. 10, MAR. 1970, P. 97-105

DATE PUBLISHED--------70


SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTOELASTICITY, STRESS ANALYSIS, MAGNETIC FIELD EFFECT, LIGHT
   TRANSMISSION, ALGORITHM, BENDING STRESS, FLAT PLATE



CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1150          STEP NO--US/0000/70/010/000/0097/0105

CIRC ACCESSION NO--AP0124805
                         UNCLASSIFIED

CIRC ACCESSICN NO--AP0124805

ABSTRACT/EXTRACT--(U) GP-O-  ABSTRACT.  THE BASIC EQUATICNS GOVERNING THE
PROPAGATICN CF POLARIZED LIGHT IN TA THREE DIMENSIONAL PHOTOELASTIC
MODEL LOCATED IN A MAGNETIC FIELD ARE DERIVED.  OPTICAL PHENOMENA IN
THIS CASE CAN BE ADEQUATELY DESCRIBED BY THE AID OF THE THEORY OF
CHARACTERISTIC DIRECTIONS DEVELOPED PREVIOUSLY BY THE AUTHOR.  THE CASE
WHEN THE PRINCIPAL STRESS DIFFERENCE, AS WELL AS THE MAGNETIC FIELD, IS
CONSTANT IS CONSIDERED IN DETAIL.  AN ALGORITHM IS DEVELOPED THAT
PERMITS THE STUDY OF THE OPTICAL PHENOMENA IN THE CASE OF ARBITRARY
STRESS DISTRIBUTICN ALONG THE WAVE NORMAL.  AS AN EXAMPLE, INVESTIGATION
OF THE BENDING OF PLATES IS CONSIDERED: GRAPHS ARE PRODUCED THAT PERMIT
THE DETERMINATICN OF THE STRESS COMPONENTS ON THE BASIS OF EXPERIMENTAL
DATA.  SOME CONSIDERATIONS OF THE EXPERIMENTAL TECHNIQUE ARE GIVEN.
    FACILITY:  AKADEMIIA NAUK ESTONSKOI SSR, INSTITUT KIBERNETIKI,
TALLIN, ESTONIAN SSR.

UNCLASSIFIED

1/2    017                    UNCLASSIFIED          PROCESSING DATE--30OCT70
TITLE--SPECTRAL PROPERTIES AND THE STATE OF PHOTOSYNTHETIC PIGMENTS IN A
   SYNTHETIC WATER SOLUBLE PIGMENT PROTEIN LIPID COMPLEX -U-
AUTHOR-(03)-GILLER, YU.YE., KRASICHKOVA, G.V., SAPOZHNIKOV, D.I.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(1), 38-46

DATE PUBLISHED-------70


SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROTEIN, LIPID, AQUEOUS SOLUTION, SPECTRAL DISTRIBUTION,
   FLUORESCENCE, BIOLOGIC PIGMENT



CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0630          STEP NO--UR/0217/70/015/001/0038/0046

CIRC ACCESSION NO--AP0117856
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0117856
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  WATER SOL. PIGMENT PROTEIN LIPID
  COMPLEXES (I) WERE PREPD. BY MIXING AT 2DEGREES 5 ML OF CENTRIFUGED (5
  MIN AT 5000 RPM) MILK WITH 5 ML OF 0.009-1.1PERCENT CHLOROPHYLL A (II),
  CHLOROPHYLL B, OR CAROTENE SOLN. IN ACETONE, AND DILG. THE MIXT. WITH 10
  ML OF PHOSPHATE BUFFER AT PH 8.04.  I WERE PPTD. WITH SATD. (NH SUB4).
  SUB2 SO SUB4 SOLN., AND WERE ISOLATED BY CENTRIFUGING.  THE PPTS. WERE
  WASHED WITH PETROLEUM ETHER AND WERE DISSOLVED IN 10 ML OF A MIXT. OF
  GLYCEROL AND BUFFER (1:1).  THE MOLAR EXTINCTION COEFFS. OF THE PIGMENTS
  DECREASED WITH INCREASING CONTENTS OF THE PIGMENTS IN I AND WITH
  INCREASING STABILITY OF I.  THE RELATIVE FLUORESCENCE YIELD OF II
  DECREASED WITH INCREASING CONTENT OF II IN I AT ROOM TEMP., AND RAPIDLY
  INCREASED (IN THE 725-735 MMU REGION) WITH DECREASING TEMP.  THIS SHOWS
  THAT II IS PRESENT IN I IN THE FORM OF AGGREGATES.          FACILITY:
INST. PLANT PHYSIOL. BIOPHYS., DUSHANBE, USSR.

UNCLASSIFIED

1/2    019                         UNCLASSIFIED           PROCESSING DATE--23OCT70
TITLE--REVERSIBLE PHOTOTRANSFORMATIONS OF CHLOROPHYLL IN A SYNTHETIC
   PIGMENT PROTEIN COMPLEX -U-
AUTHOR-(02)-GILLER, YU.YE., YUSUPOVA, G.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1470-3

DATE PUBLISHED-------70


SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHLOROPHYLL, AMINO ACID, COMPLEX COMPOUND, FLUORESCENCE,
   ABSORPTION SPECTRUM, BIOLOGIC PIGMENT


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1016        STEP NO--UR/0020/70/190/006/1470/1473

CIRC ACCESSION NO--AT0121612
                          UNCLASSIFIED

CIRC ACCESSION NO--AT0121612
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   ABSORPTION SPECTRA AND
  FLUORESCENCE STUDIES ON A SYNTHETIC CHLOROPHYLLCASEINIC ACID H SUB2 O
  SOL. COMPLEX IN THE PRESENCE OF LIGHT AND ELECTRON DONORS AND THE
  ABSENCE OF O SHOWED REVERSIBLE PHOTOREDN. OF THE CHLOROPHYLL AND
  ACCUMULATION OF A PRODUCT WITH AN ABSORPTION MAX. AT 530 M MU.   THIS
  PEAK WAS ABSENT IN THE DARK IN THE PRESENCE OF AIR.   TREATMENT OF THE
  SYNTHETIC PIGMENT PROTEIN COMPLEX WITH PETROLEUM ETHER INCREASED THE
  PHOTOCHEM. ACTIVITY OF THE PIGMENT IN ALL CASES, ESP. IN COMPLEXES WITH
  A HIGH (GREATER THAN 1PERCENT) CHLOROPHYLL CONTENT.   WHEN THE COMPLEXES
  WERE NOT TREATED WITH PETROLEUM ETHER, DURING ILLUMINATION FOR THE FIRST
  FEW MIN (LARGER THAN OR EQUAL TO 20-25 MIN) THE RATE OF REACTION, TENDED
  TO DECREASE.   MAX. ACTIVITY OCCURRED IN THE STRONGLY BOUND PIGMENT
  FRACTION (THE HIGHER THE CHLOROPHYLL CONCN. IN RELATION TO PROTEIN, THE
  LOWER THE RELATIVE CONTENT OF THIS FRACTION).          FACILITY:  INST.
  FIZIOL. BIOFIZ. RAST. DUSHANBE, USSR.

UNCLASSIFIED

1/2     010                                      PROCESSING DATE—30OCT70

TITLE:-DESUBLIMATION OF MALEIC ANHYDRIDE FROM CONVERTER (E.I.T.) GASES
  FROM FURFURAL OXIDATION -U-

AUTHOR-(05)-MUSA, Z., LIYEPINA, R., SHIMANSKAYA, M.V., ZILE, J., HILLERS,
  S.

COUNTRY OF INFO—USSR

SOURCE—LATV. PSR ZINAT. ACAD. VESTIS, KIM., SER. 1970, (2), 175-81

DATE PUBLISHED————70

SUBJECT AREAS—CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS—MALEIC ANHYDRIDE, FURFURAL, CATALYTIC OXIDATION, INDUSTRIAL
  BYPRODUCT

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—1999/1866          STEP NO—UR/0464/70/000/002/0175/0181

CIRC ACCESSION NO—AP0123654

CIRC ACCESSION NO--AP0123654
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  THE DESUBLIMATION OF MALEIC
 ANHYDRIDE (I) FROM CONVERTER GASES FROM CATALYTIC VAPOR P HASE OXIDN. OF
 FURFURAL WAS STUDIED.   EFFECT OF TEMP. AND AIR ADMIXTS. WAS STUDIED,
 OPTIMAL CONDITIONS OF DESUBLIMATION WERE DETD. AND EFFICIENCY OF THE
 DILN.   OF THE CONVERTER GASES BY COLD AIR WAS ESTD.          FACILITY:
 INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

*AAO* 036113⁻                    $\bigcirc$                    UR 0482
                                                              /-70
Soviet Inventions Illustrated, Section I Chemical, Derwent,

241563 DILATOMETRIC METHOD OF INSPECTING THE QUALITY
       OF RESISTANCE WELDING.  In welding of two
elements by resistance welding the electrodes,
which are in contact with the elements being welded
at first move apart as the metal expands but later
as the result of the solidification of the weld
they come nearer to each other.  The patent proposes
to measure this electrode travel and use it as the
basis of weld inspection.
10.2.68 as 1217177/25-27. V. A. CILLEVICH (28.8.69)
Bul 14/18.4.69. Class 21h. Int.Cl.B 23k.

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USSR                                              UDC 539.3:534.1

GIL'MAN, A. A.

"Study of the Nonsteady-State Vibrations of Plates of Complex Shape"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering
Equipment -- Collection of Works), Moscow, 1972, pp 143-145 (from RZh-
Mekhanika, No 3, Mar 73, Abstract No 3V230)

Translation:  The problem of the nonsteady-state oscillations of plates of
complex shape is solved with the aid of a Laplace transformation and subse-
quent application of the Bubnov method.  Thin plates of constant thickness
are considered.  A calculation of a square plate with an angular square cut
is given as an example.  N. A. Kulakov.

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USSR                                              UDC 539.3:534.1

GIL'MAN, A. A.

"Vibrations of Plates, the Position of the Boundaries of Which is a Function
of Time"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-
Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov,
Saratov University, 1972, pp 137-139 (from RZh-Mekhanika, No 3, Mar 73,
Abstract No 3V226)

Translation:  The nonsteady-state vibrations of a rectangular plate of con-
stant thickness are discussed.  The solution is obtained by an approximation
method presented in a previous article (Borodachev, N. M., Gil'man, A. A.,
Izv. vyssh. uchebn. zavedeniy. Str-vo i arkhit., 1970, No. 7, pp 46-52 --
RZhMekh, 1971, Abstract No 2V271).  Displacements of points of the median
surface are expressed in the form of a finite sum of triple integrals, of
which the outer represents a conversion of the Laplace transformation.  K. I.
Ogurtsov.

1/1

USSR

GIL'MAN, G. B., PINCHUK. V. K.

"Solution of Problem of Optimal Standardization of Reinforced Concrete
Products and Structures using the Criterion of Minimum Total Cost"

EVM v Issled. i Proyektirovanii Ob'yektov Str-va [Computers in Research and
Planning of Construction Objects -- Collection of Works], Kiev, Budibel'nik
Press, 1972, pp 71-75 (Translated from Referativnyy Zhurnal Kibernetika, No
4, 1973, Abstract No 4V607, by the authors).

Translation: The optimal standardization of reinforced concrete products
and structures is studied as a problem in nonlinear discrete programming.
The expenditures for manufacture of products are represented as a nonlinear
function of cost. The method of branches and bounds is used, an algorithm
is developed for the problem and a working program is written in Minsk-22
code.

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